

At this elevation, as the *deflecting force* has vanished entirely with the rotary velocity, it is evident the elevation of the axis must be maintained by the *centrifugal force alone*, due to the gyratory velocity.

In fact, if we calculate directly the angle to which the axis must fall from a horizontal position, in order that the velocity generated shall be just sufficient, if deflected into horizontal gyration, to exert a centrifugal force adequate to maintain it, we shall find this same value, $\sin^2 \theta = \frac{2}{3}$.*

In reality, the air resists gyration as well as rotation, and hence the descent will continue; but if a gyroscope could be placed in a *perfect vacuum*, and the slight friction at the point of support be entirely annulled, the axis would descend in a helix until it reached this limit, at which it would forever gyrate, though the rotation of the disk would soon by friction of the axle, entirely cease.

ART. XXXVII.—*Supplement to an Enumeration of North American Lichenes; Part first, containing brief diagnoses of New Species; by EDWARD TUCKERMAN, A.M.*

THE following characters are intended to be as succinct as possible. It is hoped however that they will prove sufficient to indicate accurately the species described. Fuller descriptions, with especial reference to the details of fructification will be given in another place.

ALECTORIA FREMONTII, sp. nova, thallo filamentoso pendulo ramosissimo implexo tereti-compresso lævigato fusco-nigrescente, ramis inferioribus hic illic incrassatis lacunoso-excavatis flexuosis tortuosisque, superioribus apice tenuissimis, ultimis simplicibus; apotheciis innato-sessilibus ex urceolato demum planis margine tenuissimo evanido discum viridi-flavo-pruinoseo cingente. Evernia, Tuckerm. Exs. n. 52.

Hab. "Camp of Dec. 5, 6, 1854," (Sierra Nevada), "California, abundant on Pines," *Col. Fremont*, (com. Torrey!) "Hangs from the lower branches of all the coniferous trees of Northern California, and Southern Oregon. We saw it only about lat. 42° to 44°. Sometimes used by the Indians as a material for the manufacture of their rude mantles and

* If the solid of revolution is of dimensions so small that it may be considered concentrated in its centre of gravity, it would require, in the fall of its axis through angle $90^\circ - \theta$, the velocity $\sqrt{2g\gamma \cos \theta}$; and this velocity, deflected into horizontal gyration in a circle whose radius is $\gamma \sin \theta$, would create a centrifugal force $2g \frac{\cos \theta}{\sin \theta}$,

whose component normal to the axis of figure is $2g \frac{\cos^2 \theta}{\sin \theta}$. Equating to this the opposing component of gravity $g \sin \theta$, we get $\sin^2 \theta = \frac{2}{3}$, as in the text.

But this result is only true where the body has no sensible dimensions, though it is nearly so when, as in the ordinary forms of the gyroscope, the moment of inertia C is small compared with A . The above value of $\sin \theta$ is a *maximum* corresponding to $C=0$, and the limit at which the helix becomes horizontal becomes lower and lower as C is greater compared with A , the general expression being $\sin^2 \theta = \frac{2(A-C)}{3A-2C}$.

That this result is not given by the analysis in the text is probably owing to its not being *strictly* true; for I have omitted the forces which retard the rotation of the disk and introduced their effects on the angular velocity, n , only.

coats," *J. S. Newberry*, Esq.! I follow *Dr. Nylander* in reëstablishing the genus *Alectoria*, Ach.

RAMALINA TENUIS, Fr. et Tuckerm. Mss., thallo cæspiticio cartilagineo rigido gracili plano-compresso lævigato viridi-glaucescente, ramis linearibus demum elongatis patentibus flexuosisque attenuatis, ultimis teretibus apicibus elongatis acutis; apotheciis majusculis marginalibus podicellatis disco subplano pallido-pruinoso marginem tenuem inflexum crenulatum demum excedente.

Hab. Trees; thickets of the Blanco, Texas, *Mr. C. Wright!* South Carolina, *H. W. Ravenel*, Esq.! Florida, *Dr. Blodgett!* Louisiana, *Dr. Hale!*

R. LEPTOCARPHA, sp. nova, thallo elongato membranaceo complanato lævigato glaucescente, ramis linearibus subsimplicibus reticulato-sublacunosus apice digitato-ramosis attenuatis acutis; apotheciis marginalibus tenuibus podicellatis margine incurvo persistente discum concavum albo-pruinatum cingente. *R. Menziesii*, Tuckerm. Synops., p. 12, (1848,) non Tayl. *R. Scopulorum* var. tenuissima, Hook. and Arn. in Beechey's Voy. p. 163? *R. scopulorum?* Menzies hb.!

Hab. Monterey, California, *Menzies!*

ROCCELLA LEUCOPHÆA, sp. nova, thallo coriaceo fragili ramosissimo intricato plano-compresso glabro fusco, ramis elongatis flexuosis attenuatis, ultimis teretibus filiformibus, passim concretis; apotheciis sessilibus plano-convexis margine thallode tenui integro discoque albo-velatis.

Hab. San Diego, California, on *Obione canescens*, *Dr. Parry*, (comm. Torrey!)

CETRARIA CHRYSANTHA, sp. nova, thallo ochroleuco amplissimo cartilagineo foliaceo ruguloso reticulato-lacunoso, lobis expansis rotundatis crenatis marginibus adscendentibus crispis, subtus piceo lævigato nitido ad margines pallescente; apotheciis loborum marginibus antice adnatis scutelliformibus disco plano e sanguineo-rubro nigrescente margine tenui crenulato. *C. glauca* β . substraminea, Babingt. in litt.

Hab. Kotzebue's Sound, *Rev. C. Babington!* Rocks on an island of the Asiatic coast of Behring's straits, *Mr. Wright!* And fertile, on rocks of the coast of Japan, *Mr. Wright!* Distinct from *C. glauca*, as the perfect, fertile specimens abundantly show, and contrary to what is the case in that species, it is, so far as our specimens go, the broad-lobed, depressed state, which is fertile in this.

ERIODERMA WRIGHTII, sp. nova, thallo coriaceo crasso molli tomentoso viridi-fuscescente, lobis subangustatis profunde sinuato-divisis ambitu rotundatis crenatis, subtus e tomento denso fusco-nigricante spongioso-pannoso; apotheciis (centro affixis subpodicellatis) lobulis discoideis adnatis submarginalibus.

Hab. Trees on the top of Loma del Gato, Cuba, *Mr. Wright!* Growing with it is another very different species of this curious and little known genus, which is probably *E. Chilense*, *Mont.* The only other species is *E. polycarpum*, *Fée*, from the Isle of Bourbon, upon which the genus was founded. It is, I believe, new to the Flora of Cuba. The present species has quite the aspect of well-marked specimens of *Peltigera rufescens*, though there are not wanting resemblances, particularly on the under side, to *Pannaria*.

PARMELIA AURULENTA, sp. nova, thallo orbiculari submembranaceo lævigato ruguloso sorediis submarginatis hic illic exasperato glaucescente, subtus atro nigro-fibrilloso, strato medullari pallide flavo, laciniis imbricatis sinuato-lobatis retusis; apotheciis sparsis disco planiusculo badio margine inflexo subintegro.

Hab. Rocks, Harper's Ferry, Virginia. I have also specimens from trunks, South Carolina, *Mr. Ravenel!* and on rocks, Alabama, *Hon. T. M. Peters!* With much the look and lobation of that smooth state of *P. saxatilis* which was separated by Dr. Taylor as *P. rugosa* (Mackay Fl. Hib.) but differing remarkably in the color of the medullary layer. *P. sulphurata*, *Nees and Flot.*, which I have from Louisiana (*Dr. Hale!*) is distinguished similarly from *P. perlata*. *P. stuppea*, *Tayl.* (*Lond. Journ. of Bot.*, vi, p. 175,) in which the medullary layer is dark-orange,—a not uncommon lichen in New England, and extending to the mountains of Georgia, (*Ravenel!*) is, in like manner, otherwise scarcely distinguishable from *P. obscura*.

P. TEXANA, sp. nova, thallo foliaceo imbricato membranaceo molliusculo lævigato rimoso pallide fuscescente, subtus nigro papillato, laciniis sublinearibus undulato-plicatis concretis convexis apice dilatatis sinuato-lacinatis lacero-crenatis, passim sorediiferis; apotheciis sparsis sessilibus badiis margine incurvo integro.

Hab. Thickets of the Blanco, Texas, *Mr. Wright!* Nearest to *P. Borreri* β . *rudecta* (*P. rudecta*, Ach.) but distinct. The genus *Parmelia* is here taken in the sense of Dr. Nylander, as including only the *Imbricariæ* of Fries. The Swedish lichenographer indicated in great part if he did not separate as genera, the divisions of the former writer, which are eminently natural.

PHYSICIA EUPLOCA, sp. nova, thallo cæspiticio molliusculo fragili orbiculari glabro fuscescente, laciniis tereti-compressis dichotomo-multifidis implexis appressis apice furcatis, subtus albo nudo; apotheciis sparsis (scutelliformibus) sessilibus disco saturate fusco opaco e plano demum convexo marginemque obtusum integrum excludente.

Hab. Shady rocks on the banks of creeks, Blanco hills, and elsewhere in Western Texas, *Mr. Wright!* The genus *Physcia*, *Nyl.*, includes, beside the well-marked tribe of Fries, also *Parm. parietina*, and *P. chrysoptalma*, and the last section of *Evernia*, *Fr.*, of which *E. flavicans* is, as yet, our only representative.

PSOROMA ASCOCISCANA, sp. nova, thallo incrustante e squamulis membranaceis rotundatis appressis concentrice rugosis demum coacervatis subcontiguo e viridi fuscescente, hypothallo nigro effuso; apotheciis adnatis disco opaco ruguloso rufo-fusco (nigricante) marginem thalldem crassum crenatum demum superante.

Hab. On trunks very common in the White Mountains, and I have found it in Massachusetts. Also on rocks, Vermont, *Mr. Frost!* New York, *Herb. Ravenel!*

PANNARIA HALEI, sp. nova, thallo e squamulis appressis crenatis imbricatis stuppeis glaucis in crustam subcontiguam dein coacervatis, hypothallo crassiusculo nigro marginante; apotheciis (biatorinis) superficialibus minusculis margine proprio tenuissimo discum pallidiorem convexum rufo-fuscum nigrescentem hypothecio crasso nigro impositum cingente.

Hab. Trunks, Louisiana, detected by the late *Dr. J. Hale*, to whom I have been indebted for several interesting collections. The genus *Pannaria*, Delis., as now understood, includes not only the tribe *Amphiloma*, Fr., of which our *P. cronia* and *P. Russellii* are examples,—but also *Psoroma*, Fr. (as reduced forms), of which our *P. leucosticta* is a common representative; excepting *P. hypnorum*, which, with *Parm. sphinctrina*, Mont., constitutes the genus *Psoroma*, *Nyl.*

SQUAMARIA FROSTII, sp. nova, thallo crustaceo adnato stellato-radioso lævigato glauco-eburneo, subtus nigro, laciniis subpalmato-multifidis convexis concretis passim sorediiferis, apicibus nigricantibus; apotheciis sessilibus, disco nigro, margine thallode tumido integerrimo.

Hab. Granitic rocks, Massachusetts and Maine, and southward to Harper's Ferry, Va. I have only seen it fertile from Vermont, *Mr. Frost!*

PLACODIUM EUGYRUM, sp. nova, thallo crustaceo adnato rimoso-areolato e viridi-luteo demum aurantio, ambitu radioso-plicato albo-pallescente; apotheciis sessilibus, disco plano aurantio-rubro, margine proprio tenui thallodeque crenulato mox evanescente.

Hab. Lime-rocks, Texas, *Mr. Wright!* Agreeing very much with *P. circinatum*, but of the lemon-colored series, and quite distinct.

LECANORA TEPHRASPIS, sp. nova, thallo crustaceo areolato-squamaceo areolis appressis crenulatis dein verrucoso-irregularibus fusco-cinerascente, subtus albo; apotheciis primitus emergentibus e rufo nigris demum prominulis planis margine proprio tenui thallodeque tumidulo cinctis.

Hab. Granitic rocks, Brattleborough, Vermont, *Rev. J. L. Russell* and *Mr. C. C. Frost!*

L. WRIGHTII, sp. nova, thallo e squamis discretis rotundatis lobatis crenatis mox subaggregatis lævigatis viridi-luteis (subaurantiis) marginibus elevatis pallidioribus, subtus pallidis; apotheciis sparsis emergentibus adnatis margine thallode crassiusculo rufo-fusco evanescente discum demum subglobosum e rufo nigrum opacum cingente, intus albis.

Hab. On the earth, in denudated places; prairies and hills of the Blanco, Texas, *Mr. Wright!* Red river, Minnesota, *Mr. Lapham!* This and the next are perhaps the most interesting characteristic lichens of our western prairies, and the present appropriately bears the name of the botanist whose collections have done more than all else to illustrate the lichen-flora of our great southwestern territories.

L. CHONION, sp. nova, thallo e squamis discretis sessilibus rotundatis crassis subintegris margine depressis subrecurvis centro excavatis subinfundibuliformibus rufo-fuscis (sæpissime dealbatis) hypothallo nigro impositis; apotheciis marginalibus emergentibus sessilibus margine thallode crassiusculo subintegro fusco nitido demum evanescente discum convexum nigricantem opacum cingente, intus albis.

Hab. On the earth, prairies of the Blanco, Texas, *Mr. Wright!* And I have what seems to be the same from the Cape of Good Hope, *Zeyher* in herb. Sonder! It appears to me that this and the nearly allied *Lecanora decipiens*, Ach. *Lichenogr.* (*Lecidea*, Ach. Syn., *Biatora*, Fr.) together with the preceding species should be placed in *Lecanora*.

L. CHRYSOPS, sp. nova, thallo crustaceo e squamulis subaggregatis rotundato-diformibus peltatis lobatis angulato-repandisve nitidis læte flavis

(nunc albicantibus farinosis) apotheciis immersis disco nudo immarginato e rufo nigricante margine thallode tumidulo integerrimo cincto.

Hab. Lime-rocks, Organ mountains, Texas, *Mr. Wright!* Mt. Carmel, Mexico, *Wright!* Aiken, South Carolina, *Mr. Ravenel!* Appears to be distinct from *L. Schleicheri*.

L. DIPHASIA, sp. nova, thallo crustaceo effuso subcontiguo lævigato dein granuloso-verruculoso viridi-glaucescente; apotheciis adnatis plano-convexis margine proprio tenui thallodeque mox demisso crenulato discum rufo-fuscum viridi-pruinose demum politum cingentibus.

Hab. Trunks, Texas, *Mr. Wright!*

L. CONIZA, sp. nova, thallo tartareo granuloso-farinoso glaucescente; apotheciis innatis, disco plano rubro-fusco, margine thallode elevato sub-integro thallo albidiori.

Hab. Trunks, Brattleborough, *Mr. Frost!* Akin to *L. subfusca*, but quite different from any state of that species that I know.

L. SIDERITIS, sp. nova, thallo crustaceo crassiusculo areolato-subsquameo plumbeo-cinereo squamis subeffiguratis dein bullatis verrucæformibus, hypothallo nigro; apotheciis appressis disco immarginato fulvo ferrugineo nigrescente nudo marginem thallodem tenuem incurvum demum excludente.

Hab. Rocks, Brattleborough, *Mr. Frost!* Nearest to *P. cerina*.

THELOTREMA SUBTILE, sp. nova, thallo crustaceo membranaceo effuso pallido; apotheciis depresso-subhemisphæricis subdifformibus dein scutelliformi-marginatis apertura ampla, excipulo interno discreto thallo albidiori laxo demum dilatato discum planum albo-velatum mox nigricantem cæsiopruinosum margine albissimo lacero-crenulato cingente.

Hab. Trunks, Brattleborough, *Mr. Frost!* Virginia, E. T. South Carolina, *Mr. Ravenel!*

T. GRANULOSUM, sp. nova, thallo cartilagineo effuso lævigato verrucoso-granuloso glaucescente; apotheciis hemisphæricis granulatis apertura demum ampla irregulari submarginata, excipulo interno tenui evanescente discum depressum nigrum albo-pruinose arcte cingente.

Hab. Trunks of cypress, Louisiana, with *T. concretum*, Fee, *Dr. J. Hale!*

T. RAVENELII, sp. nova, thallo crustaceo crasso coriaceo-cartilagineo effuso incrustante lævigato ruguloso rimoso fusco-cinerascente; apotheciis thallo inclusis, excipulo truncato-conico carneo margine tenui albo cum crusta mox concrecente evanido aperturam punctiformem orbicularem cingente discumque concaviusculum nigrescentem fovente. Sporæ ellipsoideæ fusæ.

Hab. Trunks of maple, hickory and other trees, Santee Canal, S. C. *Mr. Ravenel!* Alabama, *Mr. Peters!* Mississippi, *Dr. Veitch!* Louisiana, *Dr. Hale!* The exciple resembling that of *Endocarpon*, except that the neck is wanting, but the disk entirely that of *Thelotrema*, with which its spores also accord. It has the habit of *T. concretum*, *Fee*.

PILOPHORON, genus novum. Apothecia terminalia immarginata cephaloidea, disco hypothecio crasso atro imposito, solida, strato medullari recepta. Sporæ ellipsoideæ hyalinæ. Podetia verticalia caulescentia subsimplicia cartilaginea subfistulosa e thallo horizontali granuloso-subsquameo

maceo adnato surgentia eoque vestita. (Stereocaulon § Pilophoron, Tuckerm. Synops. p. 46. Cenomyce, Ach., Floerk., &c. pro parte.)

P. FIBULA, Tuckerm. (sub Stereocaul. l. c.)

Hab. Moist rocks along streams in the White Mountains.

P. POLYCARPUM, sp. nova, thallo granulato-squamaceo e viridi glauco, podetia plurima cæspitioso-conjuncta superne digitato fastigiata corymbiformia dura subcompressa intus araneo-subfistulosa granulis crustæ vestita demum denudata e rufo nigrescentia proferente; apotheciis terminalibus depresso-globosis immarginatis demum inflatis atris.

Hab. "Hills, growing upon spots of bare ground," upon pebbles, &c., in an island on the Asiatic shore of Behring's Straits, *Mr. Wright!*

P. ACICULARE, Tuckerm. (sub Stereocaul. l. c.)

Hab. "On stones and dead trees, frequent on the west coast of North America, 1787-1788," *Menzies!* *Douglas* in Herb. Hook.! *Scouler* in Herb. Hook.! Rocky Mountains, Herb. Hook.! With the whole aspect of *Cladonia*, these lichens possess the thallus of *Stereocaulon*, and almost the apothecia of *Lecidea*. The exact limitation of the species must however be left for further investigation. A small *Lecidea* is parasitic on the podetia of some specimens, and appears not unlike *L. parasitica*, Floerk.

CLADONIA SANTENSIS, sp. nova, thallo cæspiticio, squamulis foliaceis laciniatis adscendentibus podetiisque simplicibus superne scyphiformi-dilatatis fastigiato-subramosis granulosis glaucis; apotheciis minusculis conglomeratis rufis.

Hab. On the earth, at the base of trees, Santee canal, S. C., *Mr. Ravenel!* Akin to *C. papillaria* and *C. turgida*, but distinct.

C. CAROLINIANA, Schwein. herb. (sub Cenomyce) thallo crustaceo evanido, podetiis aggregatis bullato-ventricosis subsimplicibus superne obconico-dilatatis sublacunosis fragilibus glabris viridi-stramineis, axillis subintegris, ramis obconicis turgidis fastigiatis subdichotomis ramulo altero obsolescente, ramulis in papillas elongatas inflatas gibbas abeuntibus, apicibus obtusis dentatis; apotheciis e carneolo fuscescentibus.

Hab. On the earth, Salem, N. Carolina, *Schweinitz hb.!* Mountains of Georgia and Tennessee, *Mr. Ravenel!* This lichen is extraordinarily marked, and is unknown to the European Flora. It is still difficult to indicate satisfactory characters to distinguish it from extreme, or at least possible states of *C. uncialis* var. *turgescens*, Schær., though I believe the two to be quite distinct plants.

C. PULCHELLA, Schwein. herb., thallo cæspiticio squamuloso podetiisque cylindricis gracilibus membranaceo-corticatis squamuloso-exasperatis dein granuloso-pulverulentis e viridi glaucis, scyphis obsoletis, apotheciis (conglomeratis) symphy carpæis.

Hab. Salem, North Carolina, *Schweinitz hb.!* On rotten logs, S. Carolina, *Mr. Ravenel!* Georgia, *Ravenel!* Alabama, *Mr. Beaumont!* Florida, *Dr. Chapman!* Louisiana, *Dr. Hale!* Texas, *Mr. Wright!* The squamulose podetia resemble those of *C. bellidiflora* in miniature; and the powdery ones are sometimes almost undistinguishable from those of *C. macilenta*. There are somewhat similar small states of *C. Floerkiana*.

C. CETRARIOIDES, Schwein. herb., podetiis crassiusculis subdichotomo-fruticulosus cartilagineo-corticatis reticulato-rugulosis glabris viridi-fusces-

centibus, axillis infundibuliformibus oblique dilacerato-extensis margine radiato-proliferis radiis lateralibus abbreviatis terminali elongata compressa, apice cristato-denticulatis; apotheciis coccineis.

Hab. North Carolina, *Schweinitz herb.*! The description is made from the original specimen, which is the only one I have seen. The habit is of some states of *C. furcata* var. *crispata*. It is likely that the full development of the lichen is not here indicated.

C. LEPORINA, Fr. herb., thallo squamuloso evanido podetiisque adscendentibus inflatis subturbinatis margine repetito-proliferis ramosisque demum subtrichotome ramosissimis gracilibus erectis fruticulosus rugulosus e sulphureo pallescentibus, axillis subperforatis, apicibus radiato-dentatis, fertilibus cymosis; apotheciis coccineis.

Hab. Salem, North Carolina, *Schweinitz* in herb. Fries! *Rev. Dr. Curtis!* South Carolina (pine barrens) and Georgia, *Mr. Ravenel!* Florida, *Herb. Russell!* Alabama, *Mr. Peters!* Texas, *Mr. Wright.* Perfectly analogous to *C. rangiferina*.

C. CRISTATELLA, sp. nova, thallo evanido, podetiis cylindricis gracilibus superne scyphiformi-subdilatis cristato-radiatis radiis repetito-proliferis, fertilibus cymosis, verruculosus glauco-viridibus, axillis perviis; apotheciis coccineis.

Hab. Base of the White Mountains, found by the late *Mr. Oakes*. I can compare it only with the last, with which it may yet be found also to agree in becoming at length fruticulose.

COCCOCARPIA MICHENERI, sp. nova. *Biatora*, Tuckerm. in *Darlingt. Fl. Cest. edit. tert. p. 446.*

Hab. At the base of trunks of oak, Chester Co., Pennsylvania, *Dr. Michener!* Penn Yan, N. Y., *Dr. Sartwell!* South Carolina, *Mr. Ravenel!* Alabama, *Mr. Beaumont!* Mississippi, *Dr. Veitch!* Louisiana, *Dr. Hale!* Texas, *Mr. Wright!* This genus, indicated by Persoon (in *Gaudich. Uran. Bot., p. 226*) has been further illustrated by *Dr. Montagne* (*Ann. Sci. Nat., Aug. 1841, p. 83*), and there is no doubt of the naturalness of its separation from *Biatora*, and I incline also, with *Dr. Nylander* (*Nouv. Classif. Lich. in Bot. Not. n. 9, 10, 1855*) to place it among the *Parmeliæ*, and next to *Pannaria*. Our species extends further northward than any before known, the genus being a tropical one.

LECIDEA ELIZÆ, sp. nova, thallo crustaceo effuso e granulis minutis lætevirentibus demum glaucis; apotheciis appressis plano-convexis disco nudo sanguineo-rubro nigricante margine tenuissimo erecto nigro cincto, intus nigris.

Hab. Bark of pines in Sussex, Virginia. I have also received it from Vermont, *Mr. Frost!* It is very distinct from *L. fuscescens*, *Sommerf.* (*Nyl. Prodr. Gall., p. 117, Lich. Paris n. 133.*)

L. SANTENSIS, sp. nova, thallo effuso e squamulis crenatis mox teretiorallinis ramosis crustaceo-coacervatis glauco-viridibus, hypothallo albo; apotheciis subapplanatis margine obtuso evanescente discum demum convexum nitidum rubro-fuscum margine pallidiorem nigricantem (decolorantem, subtus nunc albo-fibrillosum) cingente, demum conglomeratis.

Hab. Trunks, on the Santee Canal, S. C., *Mr. Ravenel!* Georgia, *Mr. Ravenel!* Alabama, *Mr. Beaumont!* Mississippi, *Dr. Veitch!*

Louisiana, *Dr. Hale!* Nearest to *L. vernalis* and *L. sanguineoatra*, but apparently quite distinct.

L. VERNICOMA, sp. nova, thallo crustaceo effuso subtartareo e granulis minutis demum in crustam subrimosam conglomeratis viridi-stramineis; apotheciis minusculis appressis margine tenui erecto evanescente discum subplanum cingente, nigris.

Hab. Granitic rocks, Essex, Massachusetts, found by the late *Mr. Oakes!* Chester Co., Pa., *Dr. Michener!*

L. LEPIDASTRA, sp. nova, thallo crustaceo effuso, areolis primitus discretis subsquamulosis crenatis glaucescentibus; apotheciis cupularibus estrato corticali oriundis sessilibus disco opaco nudo plano margine persistente tenui aterrimo cincto, demum confluentibus.

Hab. Granitic rocks, Brattleborough, Mr. Frost!

OPEGRAPHA MYRIOCARPA, sp. nova, thallo crustaceo effuso e granulis minutis subtartareis coacervatis fusco-cinerascentibus; apotheciis minutissimis rotundato-sublirelliformibus superficialibus atris, disco plano-concavo margine turgido elevato inflexo cincto.

Hab. On yellow birch and other trees, in the White Mountains, and in Western Massachusetts. Our smallest species, and remarkable for its well-developed crust. The apothecia often pseudo-lecideine, but the spores accord with those of *Opegrapha*.

GLYPHIS ACHARIANA, sp. nova, thallo crustaceo effuso cerato lævigato viridi-fuscescente; stromate elevato plano-convexiusculo rotundo-diformi demum deliquescente cinereo-glaucis; apotheciis variantibus e subsolitariis rotundato-subangulosis demum confertis dendriticis vel radiatim ramosis confluentibusque medusuliformibus fuscis plano-concavis. *G. favulosa*, Ach. et *G. cicatricosa*, Ach.

Hab. Trunks, Santee canal, S. C., *Mr. Ravenel!* North Carolina, *Dr. Curtis!* Alabama, *Mr. Peters!* Mississippi, *Dr. Veitch!* Louisiana, *Dr. Hale!* Also Portugal, *Dr. Welwitsch!* Guyana, *Montagne!* Brazil, *Meissner!* Hong Kong, China, *Mr. Wright!* Eschweiler (*Lich. Bras.*, p. 166-7) appears to have confused the Acharian characters of the two species. Our lichen is *G. favulosa*, Ach., but *G. cicatricosa*, Ach. is certainly not to be distinguished from it, and if I understand our American lichen aright it has a development not indicated by Acharius.

TRYPETHELIUM CAROLINIANUM, sp. nova, thallo crustaceo cerato lævigato e viridi fuscescente, verrucis depresso-subhemisphæricis confluentibus difformibus subanastomosantibusque saturate fuscis nigrescentibus, stromate flavo, peritheciis ovoideis tenuibus atris, ostioliis papillatis nigris.

Hab. Trunks, Santee canal, S. C., *Mr. Ravenel!* Hillsborough, N. C., *Dr. Curtis!* Louisiana, *Dr. Hale!*

PYRENASTRUM RAVENELII, sp. nova, thallo crustaceo membranaceo tenui subcerato fuscescente, peritheciis verrucis conoideo-elevatis thallo primitus vestitis demum denudatis, peritheciis lageniformibus 4-8 convergentibus (nunquam confluentibus) ostioliis pallidis acutis distinctis.

Hab. Trunks, Santee canal, S. C., *Mr. Ravenel!* My materials are too imperfect to enable me to complete the description of this fine species, which appears to be rare.

P. GEMMEUM, sp. nova, thallo crustaceo effuso subcartilagineo cerato lævigato pallido-viridi-fuscescente; peritheciis emergenti-prominentibus

lageniformibus ostiolis obliquis incrassatis thallo coronatis, pluribus (—10) plerumque in verrucas astroideas depresso-subconicas ostiolis convergentibus aggregatis, vel demum in perithecium compositum, ostiolis connatis, confluentibus, ascis clavatis sporas 6—8 oblongo-ellipticas includentibus.

Hab. Trunks, Texas, *Mr. Wright!* Santee Canal, S. C., *Mr. Ravenel!*

GYROSTOMUM CURTISII, sp. nova, thallo crustaceo tenui membranaceo rimoso cinerascete, linea nigra limitato; apotheciis depressis excipulo nigro subnitido nucleum disciformem mox deliquescentem superne nigrescentem obtuse marginante.

Hab. Trunks, North Carolina, *Rev. Dr. Curtis!*

CORRESPONDENCE.

1. *Correspondence of J. Nicklès, dated Paris, January 8, 1858.**

Biographical notice of Thenard.—We have been slow in fulfilling our promise respecting a notice of this illustrious chemist, because of the difficulty of procuring accurate details of his life. His family have kept silent; and nothing has been published except a pamphlet by one of his old assistants, Mr. Le Canu, now professor at the school of Pharmacy of Paris. From this pamphlet we learn that Thenard was born on the 4th of May, 1777, at the small village of Louptière, in the department of Aube, where his parents were farmers. His first chemical publication dates from the year 1799, and treats of the oxyds of antimony; it was the subject of a commendatory report by Guyton Morveau, which was very encouraging to the young chemist. The principal works of Thenard are well known:—his discovery of oxygenized water; that also of sebacic acid; his physico-chemical researches carried on and published in connection with Gay Lussac. And besides the services rendered by him to science, through his discoveries, and his instruction in the Faculty of Sciences, Polytechnic School and College of France, he contributed much to the arts by the discovery of the *Thenard blue*, a compound of phosphate of cobalt and alumina used by painters; also by a process for purifying the oil of Colza (by means of sulphuric acid); a process for the manufacture of white lead (by means of the tribasic acetate of lead and carbonic acid). Thenard was 30 years President of the "Société d'Encouragement," and shortly before his death, he founded the Society for the assistance of the friends of science, of which we have spoken in a former number.

Death of Pecllet.—The celebrated author of the "Traité de la Chaleur appliquée à l'industrie et aux arts," the "Traité de l'Eclairage," etc., died at Paris on the 7th of December last, after some days of sickness, aged 65 years, just as he was about resuming at the Central School of Arts and Trades his course on applied physics. He was one of the founders of this celebrated establishment which has furnished engineers for almost all Europe; the others being Dumas and Theodore Olivier who died about two years since, and of whom we have given a short biographical

* This letter was received too late for our last number. Some parts of it are omitted, as the subjects have already been brought out in the Journal.